Proposed transport protocol for reliable data transfer in wireless sensor network (WSN)

Abstract

Reliable data transport is one of the most important requirements in wireless sensor network where different applications have different reliability requirements. Additionally, the characteristic of wireless sensor network, especially dense deployment, limited processing ability, memory and power supply, provide unique design challenges at transport protocol. Therefore, assuring reliable data delivery between sensor nodes and the sink in Wireless Sensor Networks (WSN) is a challenging task. A reliable protocol in wireless sensor network is a protocol that allows data transfer reliably from source to destination with reasonable packet loss. The current issues of transport protocol are how to implement reliable data transport, congestion control and energy efficient. Most of the existing transport protocols only provide reliable data transport or congestion control. However, there are several protocols that provide both functions of the transport protocol. To overcome these issues, the transport layer protocols that provide both reliable data delivery and congestion control should be taken under consideration. Besides that, transport layer algorithm also allow maximum network lifetime due to limited operating lifetime of sensor node. Thus, to prolong the lifetime of wireless sensor network, an efficient transport protocol need to support reliable message delivery and provide congestion control in most energy efficient. This paper focuses on the existing transport protocols and the future protocol that provide the entire requirement of transport protocol.